



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,288	06/24/2003	Burckhard Becker	200-80	1245
30448	7590	11/29/2005	EXAMINER	
AKERMAN SENTERFITT P.O. BOX 3188 WEST PALM BEACH, FL 33402-3188			KYLE, MICHAEL J	
			ART UNIT	PAPER NUMBER
			3677	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/602,288	Applicant(s) BECKER ET AL.	
	Examiner Michael J. Kyle	Art Unit 3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005 and 16 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 19731305 A1 ("DE '305") in view of Suska (U.S. Patent No. 4,475,266). DE '305 discloses a hinge comprising a first hinge arm (2b) and a second hinge arm (2a) with each hinge arm having a bore. The bore of the first hinge arm (see figures 6a, 6b) comprises a retaining zone (left most portion of the bore, with a constant diameter, 16) and a compensation zone (right hand portion of the bore in the figures, 17). The compensation zone has greater radial inner dimension than the retaining zone and is defined by an inner lining. DE '305 also discloses a hinge pin (4) and a shim member (90c). The shim member deforms and fills out any space between the hinge pin and inner lining. DE '305 fails to disclose a step within the bore. Additionally, the shim in DE '305 protrudes into the retaining zone.

3. Suska teaches a hinge assembly comprising two hinge arms (14, 18) with a bore extending through the arms. Suska further shows a hinge pin (20) and a shim (40, 42). The bore includes a step (at the lower end of 40, see figure 1) that acts as a seat for the shim (40, 42). The bore also includes a compensation zone (containing 40, 42) and a retaining zone (below 40, in figure 1). Providing a seat for a shim or bushing, positively and securely locates the shim or bushing in a bore. The retaining zone closely surrounds the hinge pin and the compensation

Art Unit: 3677

zone selectively receives the shim (40, 42). The shim does not protrude into the retaining zone (see figure 1). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify DE '305 as taught by Suska, such that DE '305 includes a step between the compensation and retaining zones, in order to provide a seat for the shim member (90b) of DE '305. Providing a shim member will positively and securely located the shim in the bore. Additionally, by not allowing the shim to protrude into the retaining zone, any play in the hinge is reduced, due the close clearance in the retaining zone.

4. With respect to claim 2, the combination of DE '305 and Suska discloses the inner lining to be defined by a cone having an aperture angle between 0 and 90 degrees (see figures 6a, 6b in DE '305). The step (as taught by Suska) forms an angle of approximately 90 degrees with the inner lining.

5. With respect to claim 3, the combination of DE '305 and Suska shows a shim member (90c of DE '305) having an axial length greater than the distance between the step and an outer surface of the first hinge arm. Examiner notes that step will be located between the compensation and retaining zones. In figure 6b, DE '305 shows the shim member having an axial length that extends past this region.

6. With respect to claims 4-6, DE '305 discloses the hinge pin (4) to have a radial shoulder (8, in figure 1) resting on an inner surface of the second hinge arm. The shim member is made from a mechanically plastic material (DE '305, English abstract). The retaining zone is dimensioned so as to be capable of taking a maximum radial tensile load. Examiner notes that there is no structure claimed in the present application that makes the retaining zone capable of performing the claimed function. Because the retaining zone of DE '305 meets all the

Art Unit: 3677

limitations of the claimed retaining zone, examiner asserts that the retaining zone of DE '305 is capable of performing the claimed function.

7. With respect to claim 7, DE '305 shows the hinge arms to be made from metal. Neither DE '305 nor Suska discloses the compensation zone to have an axial length that is not smaller than 50% of the axial length of the bore of the first hinge arm. However, applicant has not provided any criticality for this axial dimension of the compensation zone. No new or unexpected result appears to arise by changing the axial length of the compensation zone. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the compensation zone of DE '305 so that the length is not less than 50% of the axial length of the bore of the first hinge, and no new or unexpected result is produced from such a modification.

8. With respect to claims 8 and 9, DE '305 discloses the shim member (90c) to have a front portion and an initial shape. The front portion is inserted into the retaining zone (see figure 6b) and has a final shape that is plastically deformed relative to the initial shape. The inner lining is defined by a cone having an aperture angle between 10 and 45 degrees. The step (as taught by Suska) would form an angle with this inner lining between 95 and 111.5 degrees.

9. With respect to claim 10, the combination of DE '305 and Suska shows the shim member (90c) to have a greater axial length than the distance between the step and an outer surface of the first hinge arm. Examiner notes that step of Suska will be located between the compensation and retaining zones. In figure 6b, DE '305 shows the shim member having an axial length that extends past this region.

Art Unit: 3677

10. With respect to claims 12-15, DE '305 discloses a hinge comprising a first hinge arm (2b) and a second hinge arm (2a) with each hinge arm having a bore. The bore of the first hinge arm (see figures 6a, 6b) comprises a retaining zone (left most portion of the bore, with a constant diameter, 16) and a compensation zone (right hand portion of the bore in the figures, 17), one located behind the other. The compensation zone has greater radial inner dimension than the retaining zone and is defined by an inner lining. DE '305 also discloses a hinge pin (4) and a shim member (90c, or 9, 10 in figure 2). The shim member deforms and fills out any space between the hinge pin and inner lining. The embodiment of DE '305 shown in figure 2 shows the shim (9, 10) that does not reach the retaining zone. DE '305 fails to disclose a step within the bore.

11. Suska teaches a hinge assembly comprising two hinge arms (14, 18) with a bore extending through the arms. Suska further shows a hinge pin (20) and a shim (40, 42). The bore includes a step (at lower end of 40, in figure 1) extending in the radial direction and is contiguous to a retaining zone (below 40 in figure 1) that acts as a seat for the shim (40, 42). The step delimits a compensation zone (containing 40, 42) towards the retaining zone (around 40). Providing a seat for a shim or bushing, positively and securely locates the shim or bushing in a bore. The retaining zone closely surrounds the hinge pin and the compensation zone selectively receives the shim (40, 42). The shim does not protrude into the retaining zone (see figure 1). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify DE '305 as taught by Suska, such that DE '305 includes a step between the compensation and retaining zones, in order to provide a seat for the shim member (90b) of DE '305. Providing a shim member will positively and securely locate the shim in the bore.

Art Unit: 3677

Additionally, by not allowing the shim to protrude into the retaining zone, any play in the hinge is reduced, due the close clearance in the retaining zone. The combination would result in the step of Suska (at the lower end of 40) being implemented at the left side end of the compensation zone of DE '305. The shim would come to rest against the step and be supported by the step during axial insertion. The deformed shim member fills out space between the hinge pin, step and inner lining, and avoids radial play between the first hinge arm and the hinge pin.\

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over DE '305 in view of Suska as applied to claim 1 above, and further in view of Kempf (U.S. Patent No. 5,542,505). Neither DE '305 nor Suska explicitly discloses the use of LPDE for the shim member.

13. Kempf teaches a spring hinge with a hinge pin (42) that rotates in an enclosure (46). Examiner considers the enclosure to be analogous to the shim of DE '305 because it is subject to a relative rotation. The enclosure may be made from low-density polyethylene (LPDE) (column 4, lines 55-58). It's known to use LPDE for anti-friction purposes. It would have been obvious to one having ordinary skill in the art at the time of the invention to construct the shim of DE '305 from LDPE because of its known low friction properties.

Response to Arguments

14. Applicant's arguments filed June 20, 2005, have been fully considered but they are not persuasive.

15. Applicant argues that DE '305 does not teach the shim member filling the entry portion without reaching into the annular gap. Examiner has equated the entry portion and annular gap

Art Unit: 3677

portion to the compensation and retaining zones of the claims, respectively. Examiner acknowledges that the shim of DE '305 appears to extend into the annular gap, or retaining zone. Examiner has relied on the teachings of Suska, as addressed above, to cure this deficiency.

Conclusion


16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to the further show the state of the art with respect to shims or bushings: Gunther et al and Ramsauer.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Kyle whose telephone number is 571-272-7057. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mk


ROBERT J. SANDY
PRIMARY EXAMINER